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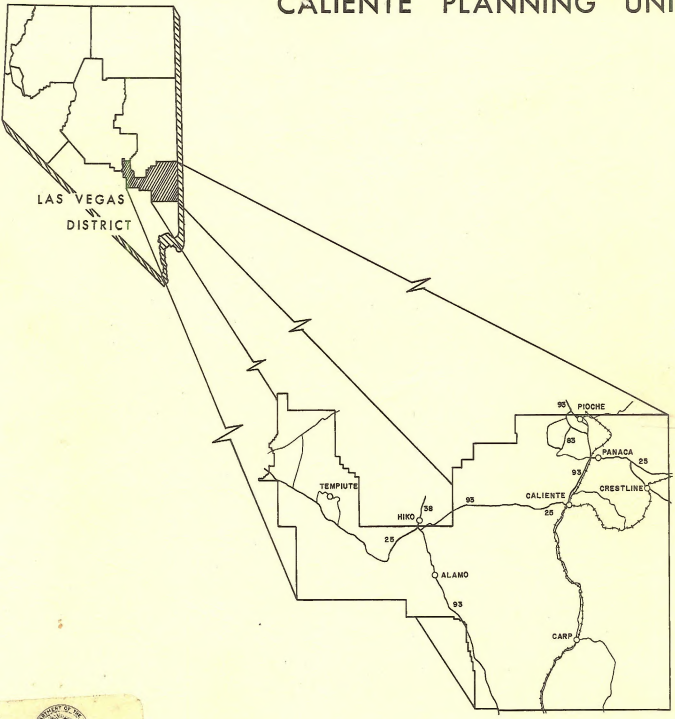
PLANNING AREA ANALYSIS
CALIENTE PLANNING UNIT



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PREFACE

This document is one of the major steps in the preparation of a Management Framework Plan for the Caliente Resource Area. The Management Framework Plan will be used in the preparation of grazing Allotment Management Plans, Wildlife Habitat Management Plans, and other resource management plans.

In addition, this Management Framework Plan will be used in the preparation of an environmental impact statement on the effect of grazing in the Caliente Resource Area.

All comments and suggestions pertaining to this document should be addressed to:

The Bureau of Land Management
Las Vegas District
P. O. Box 5400
Las Vegas, Nevada 89102

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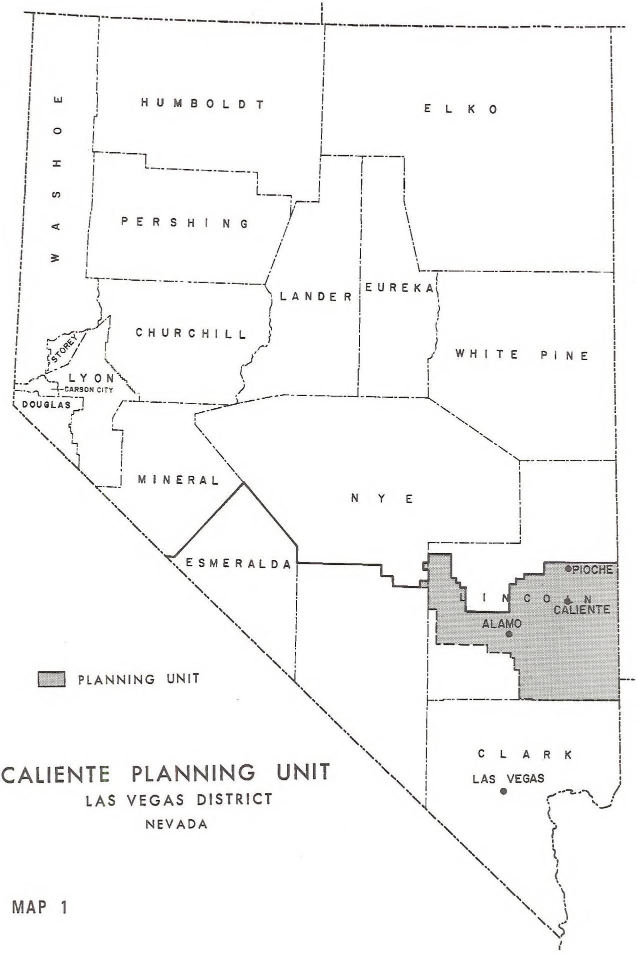


CALIENTE PLANNING UNIT

LAS VEGAS DISTRICT

NEVADA

MAP 1

PLANNING AREA ANALYSIS

.1 Introduction

The Planning Area Analysis (PAA) is intended to serve as a method of analyzing and displaying the relationship between social and economic facts presented in the Social-Economic Profile (SEP) and the physical and biologic data of the Unit Resource Analysis for a Bureau of Land Management (BLM) planning area. The data is analyzed from an economic and a social viewpoint to determine the relative significance of each resource activity and its importance to the local and national communities. The PAA also uses data developed in the SEP in order to further examine the human parameters of the environment. BLM relationships, critical environmental areas, and significant problems and issues are summarized at the end of the PAA.

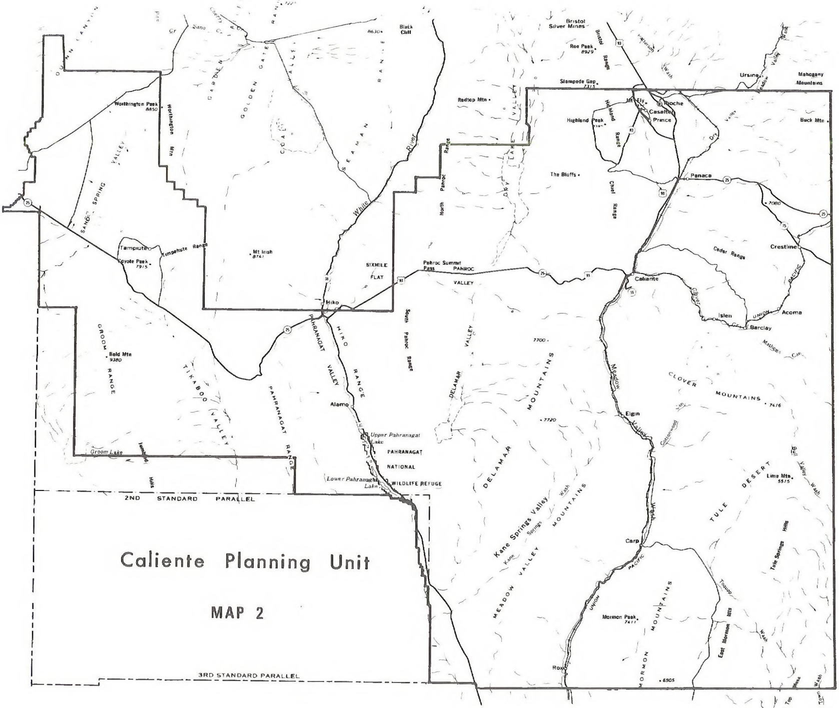
Each resource activity was analyzed for significance in terms of production, employment, and income generated from a local, regional, and national viewpoint. In addition, cultural values were identified through a socio-cultural study of Lincoln County. Social well-being was examined in comparison to the State's well-being indicators.

This document should be viewed as a part of a total planning process. The final goal is a Management Framework Plan (MFP).

One basic repository of data is the Unit Resource Analysis (URA) which was prepared as an inventory of resource data in map overlay and narrative form. A second basic information document was the SEP which was prepared for Lincoln County. This SEP provides social, cultural, and economic data about the county to analyze the physical resources within the resource area in light of the human environment.

A Management Framework Plan (MFP) is then developed from the URA and PAA. This MFP, after final public and official approval, will serve as a master plan for land management in the resource area for the next few years.

The PAA should serve as an indicator of the present impact of management, provide a basis for estimating impact beacuse of change, and specify future demands and public desires. Finally, the PAA should serve as a transition from the URA to the MFP, especially Steps 1 and 2, which display objectives, rationale, and management decisions.



Caliente Planning Unit

MAP 2

.2 Social Economic Analysis and Economic Demand Projections

This section is subheaded under Resource Activities:

.21 Lands
.22 Minerals
.23 Woodland Products
.24 Range Management
.25 Watershed - Reserved
.26 Wildlife
.27 Recreation

Watershed is reserved because the Bureau of Land Management has not yet adopted procedures for indicating significance and community impact of watershed management (such as forage benefits, erosion control, stream control, etc.).

All the other resources are analyzed according to production, income, employment, and population. BLM resources are analyzed for significance and projected future demand. Where current or future use is considered significant, additional analysis of the demand for goods and services is prepared.

.21 Lands

A. Quantifiable Land-Use Classes

The Caliente Planning Unit includes 3,414,106 acres of national resource land which constitutes 98 percent of the total area in the planning unit.

Urban-Suburban: Interspersed in national resource land (NRL) are 5 rural communities encompassing approximately 1,553 acres of privately-owned land that can be considered "urban-suburban". Of this total, 500 acres are developed. Table 1 identifies total acreage and vacant land by community:

Table 1
Lincoln County Community Land Use

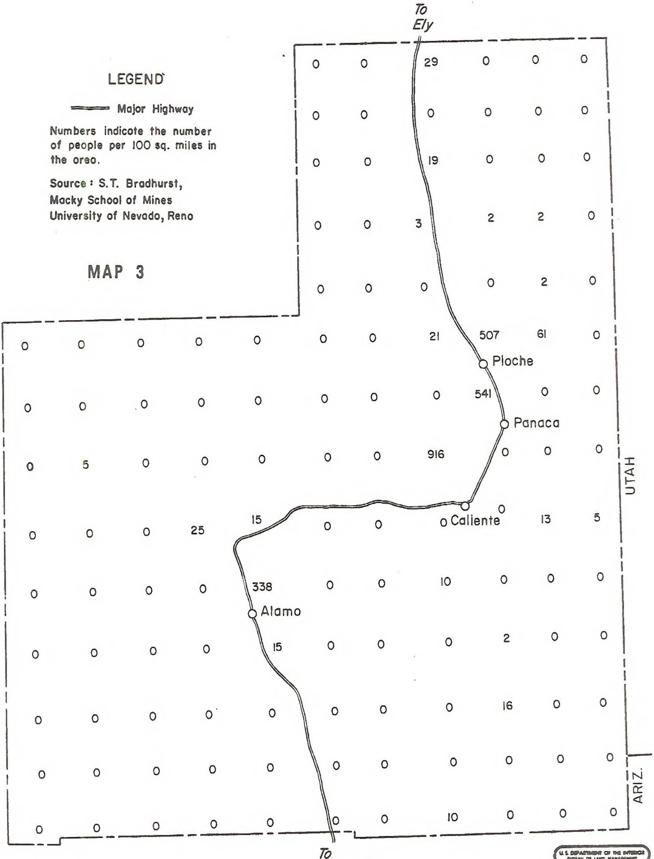
Alamo	167 acres	112 acres vacant
Ash Springs	39 acres	9 acres vacant
Caliente	866 acres	713 acres vacant
Panaca	382 acres	147 acres vacant
Pioche	182 acres	72 acres vacant

Source:
Willie and Associates, Lincoln County Master Plan, 1975.

Agriculture: The State Board of Equalization records for 1975 identify 74,323 acres of taxable agricultural land in Lincoln County; this includes cropland used for pasture, woodland pasture, and other pasture. Prorated to reflect that 61 percent of the county area is in the Caliente Planning Unit, it can be estimated that there are 45,340 acres of privately-owned agricultural land in the planning unit. A total of 38,800 acres of the agricultural land in the county is in use; on a prorated basis approximately 23,670 acres of designated agricultural land in the planning unit is utilized.

Utility Systems: Since 98 percent of the planning unit is administered by the BLM, the bulk of all utility easements must cross national resource land. NRL is significant for this land-use class.

Other Land Uses: The Land Ownership and Current Land Use sections of the URA (Step 3) enumerate the various land uses on national resource land. The public land is utilized almost exclusively for both communication sites and public purpose projects and is, therefore, significant for these uses.



MAP 3

1970 POPULATION DISTRIBUTION, LINCOLN COUNTY

B. Non-Quantifiable Land Uses

The moratorium on agricultural entry applications that has been in effect since 1964, and the subsequent multiple-use classification which has segregated all but 23,045 acres of the public land in the planning unit from agricultural entries, have precluded the primary method of transferring public land into private ownership. There is no public sale authority that is applicable to an area with large blocks of unbroken public lands. The national resource land serves as the major source of land for public projects.

C. Regional Trends

Even though Lincoln County is adjacent to the fastest-growing county in Nevada, there is no indication that this proximity will have any effect on residentiary-based demands within the planning unit. The growth in Clark County is localized in the Las Vegas Valley and has a limited effect on the remainder of Clark County. The only projected influence that the population concentration in Las Vegas will have on Lincoln County involves tourist-oriented activities. No significant growth potential, however, is attributed to this factor during this planning period.

D. Local Demand Analysis

Since 98 percent of the Caliente Planning Unit is national resource land, it is projected that growth will create demand on the public land. However, the fact that 98 percent of the land has one "owner" also tends to localize these demands around the remaining 2 percent. Although the entire planning unit is considered rural, it is possible to identify the demand centers since 90 percent of the population lives within the communities in the planning unit. There are five communities, and it is necessary to analyze each to gain the proper perspective on local requirements.

The Lincoln County Master Plan (1975) provides a basis for projections of demand to 1990. Growth throughout the planning unit is predicted to be moderate and is generally associated with potential increases in mineral production. Total population growth and consequently, local demand for national resource land is based on a population-employment ratio of 2.83.

Urban-Suburban:

Alamo: Alamo encompasses 167 acres and has 260 residents, which creates a population density of 1.5 people per acre. However, the 65 residences (including mobile homes) in Alamo are actually accommodated on lots totaling 12 acres which establishes average net densities of 21.6 people per acre or 5.4 residences per acre.

The Lincoln County Master Plan projects a moderate increase in population at Alamo resulting from the reopening of the tungsten mine at Tempiute. The mine may employ 165 workers by late 1976. This could generate a population increase of 450 to 500 persons and push the total population in Alamo to approximately 800 by 1977 or 1978. Given the present density of 5.4 residences per acre, the 112 acres of vacant land in Alamo could accommodate about 480 additional residences. This estimate includes a 21 percent or 23 acre allowance for roads. Considering an average of 3.2 persons per residence, the vacant privately-owned land is sufficient to support a population increase of up to 1,500 people. This amount appears to be adequate through the planning period. It allows for commercial development in lieu of residential development since an increase of 1,500 people is triple that projected for Alamo. However, the need to dedicate land for public purposes will increase as population increases, and the 112 acres of vacant land in Alamo cannot accommodate all projected development. A population increase of 500 residents will strain the current capacities of schools, churches, the post office, community buildings, and community recreational areas. Currently the schools, churches, and parks occupy 6.6 acres; if current population is tripled, public projects could require an additional 10 to 13 acres.

Caliente: The corporate limits of Caliente include 866 acres. Current population is approximately 900 residents. The overall population density is approximately 1 person per acre. This figure, however, is misleading for two reasons: about 75 of the residents are located at the Nevada Girls Training Center, and the 269 houses and mobile homes in Caliente are on lots totaling 40 acres. Therefore, the average net densities are 20.6 people per acre or 6 residences per acre.

Since Caliente has a broader economic base than the other communities in the planning unit, it has the greatest growth potential. The Lincoln County Master Plan projects that moderate growth will raise the population to between 1,261 and 1,346 people. At the present density of 6 residences per acre and considering the average family size as 3.2, an increase of 360 to 445 residents could be accommodated on approximately 18 to 23 acres (including roads). An additional 3 to 4 acres are projected for commercial expansion. With 708 acres of vacant privately-owned land in Caliente, it can be expected that not only the residential and commercial land needs for the projected increase in population can be satisfied, but also the corresponding requirement for public purpose lands.

Panaca: Panaca is a community with 382 acres and 539 residents. This establishes a gross population density of 1.4 residents per acre; however, the 194 residences in the community are on lots totalling 28.2 acres. Therefore, the net densities are 19 people per acre or 6.9 residences per acre.

The Lincoln County Master Plan projects moderate growth in the Panaca township. Population is expected to reach 700 to 770 by 1990. Given the present density, the 147 acres of vacant privately-owned non-agricultural land in Panaca can accommodate 710 additional residences. With an average of 3.2 people per residence, a population increase of over 2,000--triple the projected increase--could be supported. This estimate includes a 31 percent allowance for roads and does not consider 71 acres of agricultural land within the township as vacant land. Residential expansion and associated commercial and public purpose expansion could be satisfied on available private land.

Pioche: Pioche has 640 residents within the town limits of 182.6 acres, which establishes an overall population density of 3.5 people per acre. However, the residential lots comprise only 34 acres, consequently the net density is 18.8 people per acre or 6.5 residences per acre.

The mines at Pioche have hired approximately 150 persons since January 1974, and indications are that more mines in the Pioche area may be reopened. Consequently, the Lincoln County Master Plan estimates a population of between 827 and 1,425 persons by 1990 for Pioche township. The projection of 827 persons assumes a moderate increase in mining and mineral processing activities and the projection of 1,425 persons assumes a substantial increase. Although the County Commissioners have shown interest in acquiring national resource land around Pioche for residential expansion, the master plan offers the following analysis:

> There are presently some 222 residences in Pioche which occupy 34 acres or about 19 percent of the land area. Of the 182.6 acres of land surveyed in the land use inventory, 72.1 are vacant. At the present density of 6.5 dwelling units per acre and if the percentage of land used for roads remains the same, an additional 344 residences could be built. This would accommodate about 1,000 persons and should be adequate for the period of the master plan. From the standpoint of government economy, it would be difficult to justify large scale residential developments adjacent to Pioche until the available land within the community has been utilized.

Even a moderate increase in population would tend to require the available vacant land for residential and commercial purposes. Therefore, the community will look to national resource land to accommodate public projects.

Ash Springs: Ash Springs, a settlement of 30 permanent residents, encompasses approximately 37 acres. The majority of the residents live in mobile homes. The residential lots that are

occupied total 2.6 acres for a net population density of 11.5 people per acre. Since 19 acres in Ash Springs are vacant, the community can accommodate an increase of 280 people without changing the net density. This increase is substantially higher than the expected growth at Ash Springs; therefore, national resource land is not considered necessary for urban-suburban expansion during the planning period.

Public Purposes: The overwhelming quantity of national resource land in the planning unit creates situations that elude rigid analysis, but still bear heavily on proper planning. One concern of the planning unit residents is the land area subject to property tax. Their basic goal is to maximize this acreage. Since the acquisition of national resource land by individuals is difficult, the primary means of maximizing the taxable property base is to utilize national resource land for all public projects to avoid reducing the acreage of privately-owned land. Public purpose projects are normally exempt from property taxes; therefore, it would not serve the County's purposes to allow private land to be dedicated to any use that can be accommodated by the Recreation and Public Purpose Act on NRL. This is especially true since public land is readily available for public projects.

Consequently, demand for land for public purposes has been almost constant. Although this demand will be influenced by population increases in the planning unit, it is not necessarily a direct relationship. For instance, the number of sanitary landfill sites could conceivably decrease since growth could make it economically feasible to operate one or two regional sites rather than four or five local dumps.

Existing schools have unused capacity that can absorb a certain increment of growth without any change in the size or number of school sites. However, an increase beyond the unused capacity may only generate a school addition rather than an entirely new school since the expense would probably not be justified by the moderate growth projected for the planning unit.

National resource land will most likely be in greatest demand for recreational developments adjacent to the communities.

Agriculture: In a rural environment, the local demand for agricultural land seems prevalent. However, the State Board of Equalization and the studies supporting the Lincoln County Master Plan indicate only 52 percent of the privately-owned agricultural land in the planning unit is being cultivated. Therefore, evidence does not appear to support demand for national resource land for agricultural development.

.22 Minerals

The purpose of this analysis is to point out the present role of BLM in the management of minerals activities on NRL in the Caliente Planning Unit, and how it affects people who live within the unit, as well as people statewide and nationally. It will also attempt to estimate the impacts of changes that these activities will bring about in land use management and identify needs and desires of the public (local, state, and nationwide) related to minerals activities. In general this PAA will evaluate the economic and sociological relationship of minerals activities, present and potential, to the community.

A. Market Areas

Locatable minerals produced within the Caliente Planning Unit are usually exported outside the planning unit as a concentrate or in an unrefined state. Mineral commodities produced and used in the area are agricultural additives, sand and gravel, and stone. No leasable minerals are presently produced.

B. Mineral Commodities, Production and Reserves

Leasable Minerals:

1. There are presently no leasable minerals produced within Lincoln County.

2. No leasable minerals are produced on BLM administered lands in the planning unit.

3. Reserves of alunite (containing potassium) are suspected to exist in southwestern Lincoln County based on personal communications with the Earth Science Company (Charles Bauer, geologist). This company has applied for prospecting permits (3 years ago). The value or extent of these potential reserves will not be known until further exploration is done.

Reserves of phosphate rock of low grade are believed to exist in certain fossiliferous shales of southeastern Lincoln County.

4. No acreage figures can be calculated for leasable mineral occurrence.

5. Should alunite reserves be developed, the aluminum would enter the national market as $A_1 20_3$, alumina, for further refining to metal. Potassium would probably enter both local and national markets as a fertilizer. Sulfuric acid could be reacted with phosphate rock to form super phosphate fertilizer for either local or national use.

Locatable Minerals:

1. Production of locatable minerals is presently limited to gold and silver reported to be worth $1,700,000 during 1975, all from Standard Slag's Atlanta gold mine. Other unreported production may well be taking place, but no data are available concerning present production. Table 2 shows historic production of metals in Lincoln County. Most major mining districts are within the Caliente Planning Unit.

2. Information on reserves, either submarginal or otherwise, falls into two categories: (1) small operators who cannot afford to do expensive exploration and development work on their claims and, therefore, do not know what their reserves are; and (2) those who do know what their reserves are but keep them a well-guarded secret.

The Tempiute Mine of Union Carbide Co. is described (by company officials) as having a potential 20-year life.

At least six mining companies are attempting to develop workable reserves in the Pioche Area. These are: Pan American, Harrison Western, Bunkerhill and Sullivan, Kerr McGee, W. R. Grace, and a Texas investment group.

3. No adequate records are available of acreage devoted to mineral production, but is not large at present. Approximately 5,000 mining claims exist but many are not productive.

4. The only products presently produced are gold and silver which are exported outside the planning area.

Salable Minerals:

1. Sand and gravel are the only salable minerals produced within Lincoln County at present. Sales from a pit established at Alamo during 1975 (to a single user) amounted to 5,300 cubic yards valued at 15 cents per cubic yard. The material is used for projects in and around Alamo requiring concrete aggregate. About 40 acres of NRL are used.

Lincoln County uses sand and gravel from a number of "borrow pits" and material sites for road construction and maintenance. No records are available as to tonnage used.

2. Reserves of sand and gravel within Lincoln County are vast. Sand and gravel are large-volume, low-unit- value materials that have value only in relationship to their need at a particular location. If there is no need for sand and gravel within a few miles of its location, the best material possible has no present value and future value is dependent on a nearby demand.

Table 2
Value of Production from the Principal Mining District, Lincoln County
(e, estimate)

Rank	District	Principal Commodities	Value of Mineral Production		Total Value
			Prior to 1908	1908 to 1958	
1	Pioche	Zinc, silver, lead manganese	$21,343,600	$111,672,800[1]	$133,016,400
2	Bristol and Jackrabbit	Silver, lead, copper, zinc	4,800,000e	12,409,300e	17,209,300
3	Delamar	Gold	12,703,500	2,280,200	14,983,700
4	Tempaiute	Tungsten	11,400	14,910,600	14,922,000
5	Highland	Lead, silver, gold	1,500,000e	500,000e	2,000,000[2]
6	Groom	Lead, silver	---	1,083,200	1,083,200
7	Pahranagat	Manganese, silver, lead	123,700e	677,700	801,400
8	Comet	Lead, silver, zinc manganese	4,900	759,200	764,100
9	Eagle Valley	Gold, silver	284,500e	138,500e	423,000
10	Viola	Fluorspar, silver, lead	5,500e	385,200e	390,200
11	Atlanta[3]	Gold, silver	75,000e	195,300e	270,300
12	Chief	Gold, silver	25,000e	68,700e	93,700
13	Patterson	Tungsten, silver	---	75,000e	75,000
14	Pennsylvania	Gold, copper	---	50,000e	50,000[4]
15	Freiberg	Silver, lead, tungsten	---	18,000e	18,000
16	Ely Springs	Silver	---	8,400	8,400
TOTAL					$184,058,700

[1] Includes Bristol District, 1908-1915.
[2] Included with Pioche District.
[3] Includes Silver Park District.
[4] Included with Viola District.

Source:
Nevada Bureau of Mines and Geology, Geology and Mineral Deposits of Lincoln County, 1970.

3. Vast future reserves of salable sand and gravel are available on BLM lands throughout Lincoln County. No estimates of tonnages or acreages are available at this time.

Reserves of building stone, both common and ornamental, may exist within the county, but since there is presently no demand, deposits have not been developed. No acreage estimates are available.

C. Income-Employment

Analysis: The principal present and future value of minerals in the unit lies in the locatable minerals. It appears that Union Carbide's Lincoln Mine at Tempiute in northwestern Lincoln County will probably be the most significant producer of mineral wealth and source of jobs for perhaps the next 20 years. A projected investment of $21 million should bring the mine and mill on stream in 1977 producing about 100 tons per day of tungsten ore (Engineering and Mining Journal, January 1976). Significant quantities of zinc and minor amounts of other minerals will be co-products. A labor force of about 200 will be employed in the operation. (Willie Witt, Manager Union Carbide, Tempiute Operations). Most of the highly trained personnel (perhaps two-thirds) may come from outside Nevada. During a period of about one year (starting in June 1976) a construction crew of about 100 will be building a mill and related facilities at Tempiute for Union Carbide. These construction crews will probably come from outside Lincoln County, except for common labor, and will not be permanent in the area. Many will live in small trailers or campers near the job site. Some will live on a 22-acre tract near Alamo recently purchased by Union Carbide Company for homesites for their employees.

Almost none of the lands being utilized by Union Carbide at Tempiute are under BLM administration, having passed into private ownership as mineral patents. Millsite claims give the claimant rights to surface use of the land as long as it is used for milling or related purposes.

Income generated by the construction phase will be about $1.5 - 2 million, for the construction crew of 100 for a year (using average weekly earnings of construction workers, from Nevada Business Review, April 1976). Some of this will be spent locally in Lincoln County, but not as much as the permanent crew who will take over and operate the mine after construction is finished. The 200 workers employed in the actual mining operations will earn approximately $3 million a year. This represents approximately 27 percent of total personal income in Lincoln County in 1974 (Bureau of Economic Analysis and Nevada Business Review).

The mining of lead, zinc, gold, and silver ores in Lincoln County has been nearly stopped by depressed mineral economic conditions. However, exploration and development work now underway, especially around Pioche, is employing an estimated 35 to 50 persons.

There is no method to calculate what part of the production of minerals and employment comes from federal land and what comes from patented claims. However, it is estimated that most production is from private lands.

If the national economy continues to pick up, it is likely that the perlite mining at the Mackie claims and pumicite mining at the Lory Free pit of Pozzolan, of the Portland Cement Company, could be expected to start operations (products used in building and construction industries outside the county). Increases in metal prices can also be expected to increase the search for, and mining of, lead, zinc, copper, gold, and silver in the area. Old properties that are presently dormant may also be reevaluated and perhaps reopened if sufficient reserves can be blocked out.

D. Population Effect

Analysis: The opening of the Tempiute Mine by Union Carbide will have a considerable impact on Lincoln County's population. Assuming a population-employment ratio of 2.8 for Lincoln County could mean a potential increase of 560 people in the Alamo area where most of the 200 employees are expected to live.

Improvement in the national economy will probably increase mining activity which could increase the population, especially around Pioche.

E. Other Indicators of Significance

A list of royalty recipients and net proceeds of mines taxation is contained in Table 3. These figures represent 1975 operations. In fiscal year 1975 mining was assessed at approximately $1.228 million for property and "Net Proceeds of Mines" taxation purposes. This accounted for 6 percent of the total assessed valuation in the county. Ad valorem sources accounted for approximately 64 percent of tax revenues generated within the county that are allocated directly for local government support by Nevada Revised Statutes. (Tables 17 and 18, Lincoln County Social-Economic Profile, 1976.)

F. Economic Demand Projections

Demand projections for minerals are necessarily tied to national and international market conditions that will prevail in the future. Research of these future markets is beyond the scope here.

Table 3: Net Proceeds of Mines Taxation

1st Period 1975, Oct. 6, 1975

LINCOLN COUNTY

OPERATORS		
Milt Holt	6/30/75	$ 437.46
Wilkin Mining & Trucking	6/30/75	113.23
Total Operators		$ 550.70
ROYALTY RECIPIENTS		
Calneva Mining Company	6/30/75	$ 600.00
Comet Coalition Mines Co.	6/30/75	93,279.25
Golden Cycle Corporation	6/30/75	15,000.00
Tom Johnston	6/30/75	5,000.00
Teledyne Inc.	6/30/75	15,000.00
Total Recipients		$128,879.25
TOTAL LINCOLN COUNTY		$129,429.95

2nd Period 1975, April 5, 1976

LINCOLN COUNTY

OPERATORS		
Milt Holt	12/31/75	$ 1,048.62
Wilkins Mining & Trucking	12/31/75	1,882.54
Total Operators		$ 2,931.16
ROYALTY RECIPIENTS		
Bobcat Properties, Inc.	12/31/75	$ 15,854.89
Comet Coalition Mines	12/31/75	92,230.88
Golden Cycle Corporation	12/31/75	19,587.96
Total Royalty Recipients		$127,673.73
TOTAL LINCOLN COUNTY		$130,604.89
TOTAL LINCOLN COUNTY 1st and 2nd PERIODS		$260,034.00

Source:
Nevada Tax Commission, Net Proceeds of Mines Taxation, Carson City, Nevada, 1975-76.

However, determining the sources of supply for these markets is important. Therefore, the potential of Lincoln County for contributing to future production is examined to project the possibilities of the mining industry in the county.

Oil and gas are considered by general U.S. Geological Survey (USGS) studies to be potentially valuable throughout much of the county, but practical geological considerations are not favorable. Geothermal resources are also considered by the USGS to have potential value. Hot springs in the vicinity of Caliente could provide space heating for dwellings and could conceivably support greenhouse hydroponic (growing plants in nutrient solution) developments in the future. Study is needed to evaluate the possibilities of the geothermal potential, but it would be likely that this industry will provide a basis for employment past the year 2000.

Perlite operations that were doing well during boom times a few years ago have shut down. Perlite is directly related to the building industry. Perlite is widely distributed in the planning unit and large reserves exist; Lincoln County is usually the largest producer in the State. As the building industry picks up (nationally) perlite mining and processing will probably start again in the region.

Gypsum is widespread over much of southern Lincoln County in what could be commercial deposits; however, to date markets have not been developed. Increased demand for agricultural gypsum in the local area could provide employment for a few people in the future.

G. Mineral Deposit Discovery Potential

Table 4, giving some estimates of the likelihood of deposit discovery, has been compiled from general geological reconnaissance and literature research by the Nevada Bureau of Mines and Geology. The principal risk in this sort of forecast is that the finding of an isolated occurrence of a mineral can be extrapolated into a significant potential, whereas, in reality, all that exist are a few scattered occurrences of the particular mineral that may never form the basis for a commercial operation. On the other hand, what is significant is a finding of small amounts of a mineral, or combination of minerals (such as a low grade copper dissimination with minute amounts of molybdenum, gold, and silver), that can be mined in open pit operations on a large scale at such time in the future that the economics are favorable. The one occurrence is of no value while the second example would provide employment for hundreds of people. Distinguishing between these two types of mineral occurrences requires further study and testing.

Table 4
Mineral Deposit Potential

csm - Critical Shortage Mineral
sm - Shortage Mineral

		High	Moderate	Low
sm	Antimony			NE¼, NW¼, SE¼, SW¼
	Beryllium			All
	Copper	NE¼, SE¼	NW¼, SW¼	
sm	Gold & Silver	NW¼, NE¼	SW¼ SE¼	
	Iron	NE¼		NW¼, SW¼, SE¼
sm	Lead & zinc	NE¼, SW¼	NW¼, SE¼	
csm	Manganese	NW¼, NE¼	SE¼	SW¼
	Mercury		NW¼, SE¼	NW¼, SW¼
	Molybdenum		NW¼, SE¼	NE¼, SW¼
sm	Tungsten	NW¼, NE¼		SW¼, SE¼
csm	Uranium	NW¼, NE¼		SW¼, SE¼
sm	Vanadium		NE¼	NW¼, SW¼, SE¼
	Barite		SE¼	NW¼, NE¼, SW¼
	Clays		All	
	Diatomite	NE¼		NW¼, SW¼, SE¼
csm	Fluorspar	NW¼, SE¼		NE¼, SW¼
	Refractories			All
	Industrial Sand	NE¼, SW¼		NW¼, SW¼
	Sand & Gravel	NE¼		NW¼, SW¼, SE¼
	Stone	NE¼, SE¼		NW¼, SW¼
	Vermiculite	SE¼		NW¼, NE¼, SW¼
	Zeolites			All
	Geothermal	NW¼, NE¼		SW¼, SE¼
	Petroleum			All
	Phosphate		SE¼	

Source:
Nevada Bureau of Mines and Geology, "Analysis for Lincoln County, Nevada", Forecasts for the Future - Minerals, 1972.

.23 Woodland Products

A. Analysis

Woodland production within the Caliente Planning Unit originates almost entirely on national resource lands. No exact figure is available for the ratio of production from NRL to the production from lands under all other types of ownership but a BLM estimate is that 95 percent of the total production in the planning unit originates on NRL. As is pointed out in the Unit Resource Analysis, no timber products come from the planning unit, however, products include cordwood, Christmas trees, fence posts, and pine nuts and boughs.

In terms of sales, Table 5 outlines the FY 1976 woodland produce harvest on national resource lands within the Caliente Planning Unit.

As is noted above, the national resource land's contribution to the planning unit's woodland production is estimated to be 95 percent of the total originating from all land ownership sources. On a regional basis (Lincoln, Clark, and eastern Nye counties in Nevada; the western portions of Washington, Iron, and Beaver counties in Utah), the Caliente Planning Unit's NRL are estimated to account for about 30 percent of total production.

Table 5
Caliente Planning Unit Woodland Produce Harvest for FY 1976 (in dollars)

Firewood	
Non-Commercial by planning unit residents	$ 388.00
Non-Commercial by non-residents	686.00
	1074.00
Commercial by planning unit residents	60.00
Commercial by non-residents	280.00
	340.00
Posts	
Non-Commercial by planning unit resident	123.00
Non-Commercial by non-residents	829.00
	952.00
Christmas Trees	
Commercial by non-residents	1,275.00
Non-Commercial (undifferentiated residency)	5,067.00
	6,342.00
Pine Nuts	
Commercial by non-residents	25.00
Pine Boughs	
Non-Commercial by non-residents	11.00
Commercial by residents	60.00
Non-Commercial by residents	522.00
Commercial non-resident	1,580.00
Non-Commercial by non-residents	1,526.00
Non-Commercial, resident undifferentiated	5,067.00
	8,755.00

Source:
U.S. Dept. of the Interior, Bureau of Land Management, Negotiated Sales Report for Nevada, 1976.

B. Income

While NRL's contribution to woodland production in the planning unit is estimated to be 95 percent, in terms of total income in Lincoln County, woodland production contributes a minute share. In fiscal 1976, 30 cords of firewood constituted the entire commerical harvest of woodland products by local residents.

It should be noted that the production of woodland products in the Caliente Planning Unit still remains an important activity that results in lowering the dollars flowing out of the area for fuel, fence posts, and Christmas trees. These are harvested on a noncommercial basis by many residents.

C. Demand Projections

It is estimated that the production of cordwood will increase by up to 50 percent in the next five years as a result of energy shortages and significant increases in fuel prices. The production of Christmas trees in the planning unit could double within the same time period because of increasing Christmas tree prices in the region. These increasing prices are expected to encourage both commercial cutters and individuals to cut more of the relatively low value pinyon pine trees. Other woodland products are expected to remain at or near their current levels of production for the planning period (1990).

The planning unit's NRL contribution to total regional production is expected to remain at or near the 30 percent level because of it's geographic, demographic, and ecologic characteristics.

.24 Range Management

A. Analysis

National resource lands furnish approximately 86 percent of the total forage consumed by domestic livestock in the Caliente Planning Unit. Since sheep account for less than 1 percent of the grazing on NRL, all livestock are grouped under one heading in this analysis. Approximately half the allotments within the planning area are grazed yearlong, although a requirement in land base grazing units is 1.2 months on base property. Some operators have grazing privileges on both summer and winter areas, and thus their livestock are never off NRL.

Waterbase units are classified for yearlong use although some operators do not graze livestock on the allotments yearlong. On the allotments grazed yearlong, forage trend is downward, because forage plants are not able to produce seed and store nutrients for growth. Some important forage species have almost disappeared from areas grazed yearlong, due to extreme use by livestock.

Plants are more palatable during the first part of the growing season, which is the time the most grazing pressure is exerted. Only in areas where an Allotment Management Plan is in effect, are forage plants allowed rest during the critical part of the growing season.

B. Significance

An Animal Unit Month (AUM) is a measure of the forage required to feed one animal unit for one month. Table 6 shows the contribution of NRL forage to total forage in the county and the planning unit.

The livestock industry is dependent on NRL to supply 86 percent of the total forage consumed. While a total of 79,373 AUM's were used in the planning unit, only 27,147 (34 percent) were used by Lincoln County residents. The remainder were used by operators located outside the planning unit (primarily Utah). The 27,147 NRL AUM's based in the planning unit (i.e., those that contribute to income and employment in the planning unit) account for 68 percent of the livestock industry of Lincoln County residents in the planning unit.

Table 7 shows NRL significance in contributing to income and employment in the county. NRL forage in the planning unit contributes $64,881 (1.1 percent) to total income and provides employment for 21 people (2.4 percent of the labor force).

Table 6
Significance of NRL to Livestock Industry, 1975

	TOTAL AUM'S USED		Percent DEPENDENT ON NRL	AUM'S BASED IN LINCOLN CO.		Percent DEPENDENT ON NRL
	PRIVATE + NRL	NRL		PRIVATE + NRL	NRL	
County	233,211	200,349	86%	143,400	110,538	77%
Planning Unit	92,300	79,373	86%	40,195	27,147	68%

Sources:
1 U.S. Dept of Commerce, "Area Reports", 1969 Census of Agriculture, Washington, D.C., 1972.
2 Bureau of Economic Analysis, Regional Economics Information System, Washington, D.C., 1975.
3 U.S. Dept. of Agriculture, Div. of Ag. and Res. Econ, UNR, and Nevada State Dept. of Agriculture, Nevada Agricultural Statistics, Reno, Nevada, 1974.
4 Nevada State Board of Equalization, Comperative Statements of Segregations of the Tax Rolls By Counties and Classes, 1973-74, 1974-75, Carson City, Nevada, 1975.
5 U.S. Dept of the Interior, Bureau of Land Management, Grazing Master Unit Record, 1975.

Table 7
Income-Employment, 1975
(Range Management)

LIVESTOCK	INCOME[1]		EMPLOYMENT[2]	
	COUNTY	PLANNING UNIT	COUNTY	PLANNING UNIT
Total Livestock	$342,726	$96,066	61[3]	24[4]
NRL	$264,186	$64,881	52	21
Percent of total county income and employment dependent on NRL (total income from all sources: $5,719,000; total employment = 860)[5]	4.6%	1.1%	6%	2.4%

Sources:

1 Computed from income/AUM ratio (2.39).
2 Based on total AUMs used in county.
3 Computed using ratio of livestock income to total agricultural income and applying it to the 90 workers employed in agriculture in the county.
4 Computed using AUM/livestock employee for county.
5 Bureau of Economic Analysis, Regional Economics Information System, 1975, and County Labor Force Summary: 1970 and 1974, State of Nevada Employment Security Department, Carson City, Nevada.

C. Demand Projections

Total licensed use on NRL in the Caliente Planning Unit during the 1975 grazing season (March 1, 1975 to Feb. 29, 1976) totalled 79,373 AUM's. Total authorized use within the planning unit is 121,945 AUM's. There is also suspended non-use of 68,054 AUM's. Demand projections from the Socio-Economic Data System indicate an 18 percent increase in demand is expected in the Caliente Planning Unit by 1990. Given the authorized active use, at present, this indicates a demand for 143,895 AUM's in 1990.

Wild, free-roaming horses/burros create an additional demand on forage resources on NRL in the Caliente Planning Unit. Forage is largely utilized by wild, free-roaming horses on allotments located in the northeastern portion of the planning unit. Throughout these grazing units forage consumed by wild horses reduce the carrying capacity for domestic livestock by as much as 50 percent.

.25 Watershed (reserved)

.26 Wildlife

A. Hunting

1. Table 8 shows the percent of species habitat on NRL.

Hunter days for deer were taken from "Big Game Investigations and Hunting Season Recommendations, 1976" (Nevada Department of Fish and Game, Reno, Nevada. Hunter days were prorated to the percent of the management areas that are within the planning unit. Bighorn sheep hunter days were derived from 1975 records kept by Nevada Department of Fish and Game (NDF&G). Upland game hunter days were computed on a 6-year average because of fluctuations in populations from year to year. The data was taken from "Upland Game, Migratory Game Birds, Fur Investigations, and Hunting Season Recommendations, 1970-1975" (NDF&G, Reno, Nevada). Indications are that 90 plus percent of the quail harvest came from within the Caliente Planning Unit, or 6,600 harvested. With a 10 percent harvest rate, the estimated average quail population is about 66,000 birds.

During the 1970-1975 seasons, an average of 10,111 mourning doves were reported harvested in the planning unit. NDF&G estimates that approximately 80 percent of the reported harvest came from national resource lands adjacent to private croplands or seedings. The estimated dove population based on a 15 percent harvest rate is approximately 53,926.

An annual average of 5,084 rabbits were harvested from 1970-1975. A 5 percent harvest rate of rabbits indicates a population of approximately 101,680.

2. Hunter days per unit of species population (Table 9) is used to determine species population demand in the planning period. They were calculated by using hunter days taken from "Big Game Investigations and Hunting Season Recommendations, 1976", (NDF&G) and "Upland Game, Migratory Game Birds, Fur Investigations, and Hunting Season Recommendations, 1970-1975", (NDF&G). Species populations were estimated from the "Wildlife Population Estimates, Distribution and Forage Requirements for the Caliente Resource Area", (NDF&G, 1976).

3. Hunter days/acres of habitat (Table 9) was used to determine habitat demand in the planning period. Hunter days and acres of habitat were calculated by using hunter days listed in "Big Game Investigations and Hunting Season Recommendations, 1976", (NDF&G) and "Upland Game, Migratory Game Birds, Fur Investigations and Hunting Season Recommendations, 1970-1975", (NDF&G) and acres of habitat from Caliente URA, Step 3 for wildlife.

4. Percent of planning unit area's habitat on national resource lands was taken from Wildlife URA Step 3. (Table 1)

The eastern boundary is the Nevada state line and the southern boundary is the Lincoln County line.

Table 8
Significance of NRL to Species Habitat, 1975

Species	Hunter Days	Species Population	Total Habitat Acres	NRL Habitat Acres	Percent NRL 1975
Mule Deer	5019	2769	1,024,516	1,019,516	99
Bighorn Sheep	56	708	363,920	363,920	100
Quail	2309	44,000	251,030	207,600	83
Mourning Dove	2077	53,926	92,770	53,640	58
Cottontail Rabbit	4559	101,680	88,070	47,120	54
TOTAL	14,020	225,083	1,820,306	1,691,796	66

Source:
From report compiled by Nevada Department of Fish and Game, Region III for the Caliente Planning Unit, 1976.

TABLE 9

Hunter Day Coefficients, 1975

Species	Hunter Days	Hunter Days/Acre Habitat	Hunter Days/Species Population
Mule Deer	5019	.0049	1.812
Bighorn Sheep	56	.000154	.079
Quail	2309	.0092	.0349
Mourning Dove	2077	.0224	.0385
Cottontail Rabbit	4559	.0518	.0448

B. Fishing

1. Table 10 gives the percent of fish habitat that is on NRL.

Number of angler days was taken from "Creel Census", (NDF&G, 1974). Figures were recorded on a five-year average for each fishable creek (cold water fisheries) and on a three year average for reservoirs and lakes (warm water fisheries) within the planning unit where data was available.

2. Angler days per unit of habitat, used to determine habitat demand, was calculated by using angler days in "Creel Census", (NDF&G, 1974) and unit of habitat was taken from the "Streams and Lakes Inventory" (NDF&G, 1975)

3. Percent of habitat on national resource land was calculated from units of habitat taken from the "Streams and Lakes Inventory" (NDF&G, 1975).

TABLE 10

Significance of NRL to Fish Habitat, 1975

Creek	Fishable Length Total Miles/NRL Miles	Avg. Angler Days 1970-1974	Angler Days/ Unit of Habitat	Percent NRL
Beaver Dam Creek	3.1/2.5	397	128/mile	81%
Clover Creek	5 /5	533	106/mile	100%
TOTAL	8.1/7.5	930	115/mile	93%

Reservoirs & Lakes	Fishable Acres Total Acres/NRL Miles	Avg. Angler Days 1972-1974	Angler Days/ Unit of Habitat	% NRL
Schroeder Res.	20/0	2627	131/acre	0
Echo Res.	744/0	3798	5/acre	0
Pahranagat Lake	240/0	510	2/acre	0
TOTAL	1004/0	6935	7/acre	0

C. Regional Perspective

Mule deer hunting, which provides 36 percent of the hunter days for consumptive use of wildlife in the planning unit, is the primary economic factor for wildlife. Records indicate that a majority of the deer wintering on the Tule Desert migrate from the Dixie National Forest in Utah. Therefore, the Tule Desert as well as other crucial areas identified in URA Step 3, are important for the maintenance of mule deer populations for consumptive use in Lincoln County. As hunter demand increases, production of deer in low productive areas will need to be increased.

Interest in bighorn sheep as a trophy animal is high as indicated by the number of applications received for the limited number of tags, even with a change in application regulations and increased tag fee. In 1975, 51 persons applied for 6 tags issued by the Nevada Department of Fish and Game. The rugged isolated mountains in the planning unit (URA Step 3) provide habitat for bighorn sheep.

Upland game hunting is fair in the planning unit. Habitat requirements in most areas are present in sufficient amounts to maintain populations of rabbits, quail, and dove. Quail and dove are the most important upland game species. The crucial habitat areas (shown on the overlay, URA Step 3) involve waters that support the population in those areas. To maintain present populations, it is important that the cover surrounding the waters be maintained.

Most rabbit hunting seems to be incidental to other types of hunting (quail, dove). Therefore, as the demand for quail and dove harvest increases, the hunting of rabbits will also increase.

With the exception of quail, most of the harvest of small game is by local hunters. About 75 percent of the quail hunters are from Clark County. (NDF&G Report for Caliente Planning Unit, 1976).

Fisheries habitat within the planning unit consists of small creeks, reservoirs, and lakes. The creeks are small and have high agricultural demands on them. Riparian (streamside) vegetation along the creeks is heavily utilized by livestock and wild horses. Riparian vegetation is important for cover, water temperature, and food production for fish. Management of these waters for fisheries in the future will depend on the livestock management system initiated and creek improvements projects.

With the predicted increase in population, leisure time, and mobility on the part of recreationists and increased stocking efforts on the part of the Nevada Department of Fish and Game, the number of anglers and angler days should increase in Lincoln County.

D. Income-Employment

Each major species hunted contributes to income and employment in the county. Table 11 outlines these factors and determines the economic contribution of NRL for each consumptive use of wildlife. Overall, hunting contributes less than one percent to total income and employment in the county. In terms of income accruing to local residents, deer hunting provides $19,640. In terms of Animal Unit Months, a deer AUM provides approximately $2.40 in direct income.

Table 11
Income-Employment, 1975
(Wildlife)

Consumptive Use by Species	NRL Hunter Days	Percent NRL	Hunter[1] Expenditure	Direct[2] Income	Direct[3] Employment
Deer	5019	99	29,461	19,640	2
Bighorn Sheep	56	100	328	218	-
Quail	2309	83	13,553	9,035	1
Mourning Dove	2077	58	12,191	8,127	1
Cottontail Rabbits	4559	54	26,761	17,840	2
TOTAL	14,020	66	82,294	54,860	6

[1] \$5.87 Local area expenditure per day (adjusted to 1975 dollars), Garrett, James R., Characteristics of Nevada Hunters, Agri. Exp. Sta., University of Nevada, Reno, June 1970.

[2] Expenditures ÷ 1.5 = income base

[3] Direct Income ÷ Average personal income/employee for trade (from Caliente SEP, Table 11 (Adjusted to 1975 dollars) = Direct Employment

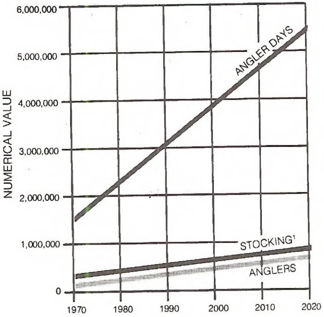
E. Demand Projections

The demand for wildlife resources is influenced by the regional population. The regional population (Lincoln and Clark) has a projected growth factor of 1.61 from 1975-1990. This factor is derived from projections for 1990 by Chu (ref. 1, Table 4 of Social-Economic Profile) for Lincoln and Clark counties combined, divided by the 1975 population for the same areas.

Statewide trends are reflected in the following graphs taken from Water for Nevada, Volume 6, published by the State Engineer's Office.

GRAPH 1:
ALL FISH DATA PROJECTIONS

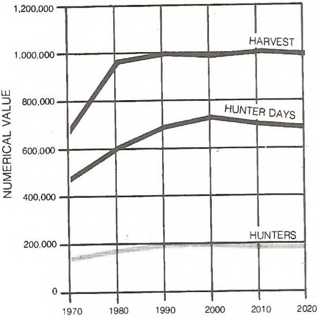
RESIDENT AND NONRESIDENT ANGLERS, ANGLER DAYS AND STOCKING, STATEWIDE, 1970-2020



¹POUNDS

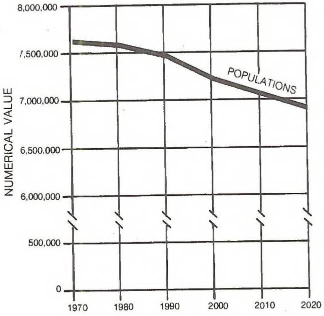
GRAPH 2:
ALL GAME DATA PROJECTIONS

RESIDENT AND NONRESIDENT HUNTERS, HUNTER DAYS AND HARVEST, STATEWIDE, 1970-2020



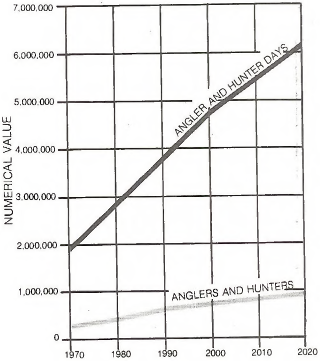
GRAPH 3:
ALL GAME DATA PROJECTIONS

POPULATIONS, STATEWIDE, 1970-2020



GRAPH 4:
ALL FISH AND GAME DATA PROJECTIONS

RESIDENT AND NONRESIDENT ANGLERS AND HUNTERS, ANGLER AND HUNTER DAYS, STATEWIDE, 1970-2020



If national resource lands are to provide the same share of the wildlife resource in the future that it produces at present, increases in habitat area or species populations will be required to meet hunting and fishing demand in the future. Demand, based on increases in local and regional population is projected to grow approximately 60 percent. Tables 12, 13, and 14 outline species population increases or habitat area increases needed to meet this demand.

In most areas it is not feasible to actually increase habitat areas (e.g., "stretch a stream's length"). Improving the quality of habitats in order to support increases in the species populations, is the more realistic approach.

Habitat demand projections in Table 12 were determined by the following formula:

1975 hunter days X 1.61 (growth factor) - hunter day demand 1990.

1975 hunter days - 1975 habitat acres = hunter days/acre habitat.

Hunter day demand 1990 - hunter days/acre habitat = total habitat acre demand 1990.

Percent NRL X total habitat acre demand 1990 = habitat acre demand on NRL 1990.

Species population demand projections given on Table 13 were determined by the following formula:

1975 hunter days - 1975 species population = hunter days/species population.

Hunter days/species population X hunter day demand 1990 = total species population demand 1990.

Total species population demand 1990 X percent NRL = species, population demand on NRL 1990.

Fisheries habitat demand projections given on Table 14 were determined by the following formula:

Average angler days X 1.61 (growth factor) = angler day demand 1990.

Average angler days - habitat units = angler day/unit of habitat.

Angler day demand 1990 - angler days/unit of habitat = total habitat demand 1990.

Percent NRL X total habitat demand 1990 = habitat demand on NRL 1990.

Table 12
Habitat Demand Projections

Species	1975 Hunter Days	1990 Hunter Days Demand	Hunter Days Per Acre Habitat	Present Habitat Acres on NRL	1990 Total Habitat Acres Demand	Per-Cent NRL	1990 Habitat Acres Demand on NRL	Increase in NRL Habitat Acres Required to Meet 1990 Demand
Deer	5019	8080	.0049	1,019,516	1,648,979	99	1,632,489	612,973
Bighorn Sheep[1]	56	90	.000154	363,920	584,415	100	584,415	220,495
Quail	2309	3717	.0092	207,600	404,021	83	335,338	127,738
Mourning Dove	2077	3344	.0224	53,640	149,285	58	86,586	32,946
Cottontail Rabbit	4559	7340	.0518	47,120	141,699	54	76,517	29,397

1/ This does not indicate true demand because of the quota system in effect in the area. Total demand for bighorn sheep hunting is not known, but is probably considerably greater than the actual hunting that took place. (51 applications for 6 tags) The 1990 projections in the table merely indicate the maintenance of the existing level and share of hunting resources presently provided by NRL within the constraints of this quota system.

Table 13
Species Population Demand Projections

Species	1975 Hunter Days	1990 Hunter Days Demand	Hunter Days Per Species Population	Present Species Population Demand on NRL	1990 Total Species Population Demand	Per-Cent NRL	1990 Species Population Demand on NRL	Increase in NRL Species Population Required to Meet 1990 Demand
Deer	5019	8080	1.812	2,741	4,459	99	4,414	1,673
Bighorn Sheep[1]	56	90	.079	708	1,139	100	1,139	431
Quail	2309	3717	.0349	54,780	106,504	83	88,399	33,619
Mourning Dove	2077	3344	.0385	31,277	86,857	58	50,337	19,100
Cottontail Rabbit	4559	7340	.0448	49,420	147,389	54	79,590	30,170

1/ This does not indicate true demand because of the quota system in effect in the area. Total demand for bighorn sheep hunting is not known, but is probably considerably greater than the actual hunting that took place. (51 applications for 6 tags) The 1990 projections in the table merely indicate the maintenance of the existing level and share of hunting resources presently provided by NRL within the constraints of this quota system.

Table 14

Fisheries Habitat Demand Projections

Creek	Annual Average Angler Days	1990 Angler Day Demand	Angler Days Per Unit of Habitat	Present Habitat on NRL	1990 Total Habitat Demand	Per-Cent NRL	1990 Habitat Demand on NRL	Increase in NRL Habitat required to to meet Demand
Beaver Dam	397	639	128/mile	2.5 miles	5 miles	81	4 miles	1.5 miles
Clover	533	858	106/mile	5 miles	8 miles	100	8 miles	3 miles

.27 Recreation

A. Visitor Use

The Recreation Unit Resource Analysis for the Caliente Planning Unit estimates that 44,000 visitor days are expended on national resource lands adjacent to the major highways. This figure is a small proportion of the visitation occurring within the planning unit. By far the most intensively used attractions are the units of the Nevada State Park System. Visits recorded for these areas in 1975 were: 5,246 visits at Beaver Dam State Park; 33,263 visits at Echo Canyon State Recreation Area; 24,432 visits at Kershaw-Ryan State Recreation Area, and 62,824 visits at Cathedral Gorge State Park (Nevada State Park System). While these numbers are large when they are compared to the planning unit's population size, they still account for but a small proportion of the recreation visits occurring within the unit. Table 15 displays the visitor days estimated to be occurring on both the national resource lands (BLM administered lands) and non-national resource lands within the Caliente Planning Unit.

As may be seen from these statistics, the national resource lands provide approximately 55 percent of the recreational use presently occurring within the planning unit. It may be concluded that the national resource lands are responsible for producing a significant portion of the planning unit's recreation visitor days.

The Caliente Planning Unit provides a vast area and a number of resources that are scarce elsewhere in southern Nevada. Recreationists in large numbers visit the planning unit to engage in a variety of activities. These visiting recreationists are primarily from Clark County and particularly from the Las Vegas metropolitan area. In terms of total recreation visitor days spent within the planning unit the visitor from Clark County is estimated to account for up to 80 percent of total recreation use. (BLM estimate). It is believed that visitation by residents from other areas, other than by those persons travelling through the planning unit on U.S. Highway 93, is relatively minor and is quite likely to be cancelled out numerically by planning unit residents visiting areas outside of the planning unit. Thus, the region that the planning unit serves can be thought to consist of the planning unit plus Clark County.

Table 15
RECREATION VISITOR DAYS OCCURRING WITHIN THE CALIENTE PLANNING UNIT (1975)

Recreation Activity	PLANNING UNIT Visitor Days[1]		
	Total	NRL	Percent NRL
Hunting[2]	14,020	9,253	66
Fishing[2]	7 865	865	11
Driving for pleasure (general and specialized sightseeing and non-motorcycle off-road vehicle use)	32,326	29,157	90
Horseback Riding	8,771	6,220	71
Picnicking	10,372	8,976	87
Hiking and Walking	6,469	4,410	68
Trailer Camping	84,285	39,302	47
Tent Camping	64,738	32,978	51
Nature Study (specialized sightseeing)	4,307	4,038	94
Motorcycle Riding	17,762	16,147	91
Other Recreation	32,921	5,670	17
TOTALS	282,836	157,016	55

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[1] One visitor day is equal to twelve man-hours of recreational activity.

[2] The statistics for hunting and fishing were developed in the Wildlife Section of this document.

Source:

Visitor day statistics are based on participation rates for Nevada Outdoor Recreation Planning Regions #3 (Clark County) and #4 (Eureka, Lincoln, and White Pine counties) as developed by the Nevada State Park System for the yet to be published 1976 edition of the Nevada Statewide Comprehensive Outdoor Recreation Plan. Additional calculations have been made on these participation rate statistics to make them applicable to the Caliente Planning Unit.

B. Income-Employment

The recreation use occurring in the Caliente Planning Unit produces a considerable amount of income for the residents of the planning unit. This income includes monies spent in purchasing transportation, food, and lodging and those sums spent for the purchase and maintenance of recreational equipment. Table 16 shows the estimated total income and the income occurring as a result of recreational use of the national resource lands.

The total income produced within the planning unit by recreation activity represents over 9 percent of the total (all activity) income within the county. Of that amount, approximately 72 percent of the recreation produced income is attributed to recreation use on national resource lands. Translated into employment within the planning unit, this means that an estimated 50 jobs (plus an undetermined number of jobs related to hunting and fishing) can be identified as resulting from recreation expenditures.

Table 16
RECREATION RELATED INCOME OCCURRING WITHIN THE CALIENTE PLANNING UNIT (1975)

Recreation Activity	Planning Unit Income[1]			Employment	
	Total	NRL	Percent	Total	NRL
Hunting[2]	Not Determined	54,860[3]	Unknown		6[3]
Fishing[2]	Not Determined	Unknown	Unknown		Unknown
Driving for pleasure (general and specialized sightseeing and non-motorcycle off-road vehicle use)	243,970	219,487	90	24	22
Horseback Riding	117,119	65,553	56	12	7
Picnicking	79,871	65,425	82	8	7
Hiking and Walking	3,395	2,708	80	0	7
Trailer Camping	122,765	77,733	63	12	6
Tent Camping	102,109	58,551	57	10	6
Nature Study (specialized sightseeing)	1,436	1,346	94	0	0
Motorcycle Riding	11,841	10,765	91	1	1
Other Recreation	15,189	2,085	14	2	0
TOTAL	697,695	503,653	72	69	50

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[1] Planning unit income is defined as income accruing to planning unit residents as a result of recreational participation within the planning unit.

[2] The statistics for hunting and fishing were developed in the Wildlife Section of this document.

[3] Income and employment figures for hunting are not included in the totals because they reflect only income and employment related to hunting on national resource lands (and, therefore, would affect the accuracy of the percent figure).

C. Demand Projections

Changes in economic demand through the year 1990 can be roughly predicted by considering several factors that are expected to be at work during this period. The most significant factor is that of regional population growth. This growth is predicted to total a 61 percent increase by 1990. The construction of the White River (Sunnyside) Highway is expected to result in a decrease in number of persons passing through the eastern portion of the planning unit. No reliable estimates of how this decrease in traffic (and the corresponding increase in the accessibility of what might be considered more desirable recreation resources in the Ely area) will affect the Caliente Planning Unit area are available. All that can be said is that there will be some decreases in visitation as a result of the highway's construction.

In view of the above, visitation, income, and employment could go one of at least three ways. First, these items could increase at the same rate as the regional population growth (1990 represents a 61 percent increase over the present) and the White River Highway would have no appreciable affect on visitation, income, or employment. Second, these items could remain constant (or decrease) because the population growth would be cancelled (or exceeded) by the White River Highway's influence. Third, these items will be subject to an overall increase equal to the regional population increase and the "driving for pleasure", "trailer camping", "hunting", and "fishing" recreational activity would be simultaneously decreased as a result of the White River Highway Construction. Table 17 displays the projected visitation under the third (and most probable) alternative.

Table 17
CALIENTE PLANNING UNIT (1990)
Visitor Days[1]

Recreation Activity	Total	NRL	Total
Hunting[2]	16,936	11,178	Unknown
Fishing[2]	11,396	1,253	Unknown
Driving for Pleasure	26,022	23,471	196,396
Horseback Riding	14,121	10,014	268,498
Picnicking	16,699	14,451	128,592
Hiking and Walking	10,415	7,100	5,466
Trailer Camping	122,129	56,949	177,886
Tent Camping	93,805	47,785	147,956
Nature Study	6,934	6,501	2,312
Motorcycle Riding	18,597	16,906	12,398
Other Recreation	53,003	9,129	24,454
TOTALS	390,057	204,737	963,958

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[1] One Visitor day is equal to twelve man-hours of recreational activity.

[2] The statistics for hunting and fishing were developed in the Wildlife Activity Section of this document.

Sources:

Visitor day statistics are based on participation rates for Nevada Outdoor Recreation Planning Regions #3 (Clark County) and #4 (Eureka, Lincoln, and White Pine counties) as developed by the Nevada State Park System for the 1976 edition of the Nevada Statewide Comprehensive Outdoor Recreation Plan. Additional calculations have been made on these participation rate statistics to make them applicable to the Caliente Planning Unit.

.3 Social Values Analysis

This section is divided into 3 sub-sections:

.31 Socio-Cultural Values

.32 Social Well-being

.33 Public Positions and Expenditure Analysis

.31 Socio-Cultural Values

The socio-cultural values section summarizes values of persons and groups as they relate to national resource lands. The values may be associated with an object, place or structure, or an intangible entity such as a belief, feeling, or way of life.

The basis for this section is a study of cultural values in Lincoln County conducted by Loren Reichert, Ph.D. and James Frey, Ph.D., Department of Sociology, University of Nevada, Las Vegas, and is included in the Lincoln County Social-Economic Profile.

A. Cultural Groups

The study identifies various sub-groups in the county and focuses on the value orientations of each group. The major differences in value orientations that serve to set apart sub-groups within the population are those relating to economic interest, social and economic change, and the importance of origins, kinship, and religion in establishing social and political influence. The bases of sub-group identification are not mutually exclusive. It is impossible to socially locate individuals in the community or to discuss their values exclusively in terms of a single affiliation. For example, a rancher and a businessman may both be Mormons, old-timers, and sportsmen. Overlapping memberships serve to minimize the existence of clearcut factions within the county. Clearly distinct cultural groups (subcultures) do not truly exist within Lincoln County. Therefore, the following analysis of basic values held by Lincoln County residents proceeds in terms of eight major bases of social affiliation: retired newcomers (retired people who have lived in the county for ten years or less), newcomers (not born in Lincoln County), old-timers (born in the county), Mormons (those active in the Church of Jesus Christ of the Lattar-Day Saints), sportsmen (those who hunt and fish regularly), ranchers, business and professional people, and influentials. Social affiliation is defined as social groupings to which respondents in the survey were assigned as "members" by the researchers or perceived by respondents.

Some of the similarities in value patterns reflected in Table 18 are partially consequences of overlapping memberships. Influentials, for example, overlap with every other group with the exception of retired newcomers. These newcomer-retireds are, however, exclusive of the occupational categories and old-timers as well as the influentials. The business and professional group and ranchers are mutually exclusive categories (though some businessmen and professionals are hobby ranchers) as are the oldtimer and newcomer categories. Consequently, two categories were added to facilitate analysis even though those categories are not perceived by the residents as bases for social identification and group affiliation. "General public" contains all respondents not identified as

influentials, and "non-Mormon" subsumes all respondents who are not actively involved in the Latter-Day Saints church.

The basic values of these "groups" were abstracted from responses to questions about their likes and dislikes concerning living in Lincoln County, the problems they see facing the county, and the circumstances under which they would consider moving from the county. The reported values and the frequencies with which they were evoked reflect emphasis upon those values associated with life conditions. Moral values and religious ideals are clearly under-emphasized in terms of frequency of response as the question format was not designed to evoke such a response. On the other hand, the association of the study with the Bureau of Land Management did condition informants to consider values relating to political and organizational impacts on their conditions of life. It should also be noted that the table presented reports the numbers of people, by categories, who displayed each indicated value. Hence, Table 18 reports the consistency with which these values are held, not the degree of commitment with which they are held. (See Technical Report in the Lincoln County SEP.)

B. Social Values

Fourteen value-dimensions were identified after a content analysis of statements obtained from respondents. A review of sociological literature about rural communities added support and clarity to these dimensions.

Rurality: positive value placed on the small size of local communities and on the quality of rural life. "Anti-city" attitudes are commonly indicated in such expressions as "uncrowded" "less crime," and "less hustle and bustle, you can set your own pace."

Environmental: reference to climate, clean air, no pollution, and to the easy access to outdoor recreation, e.g., hunting and fishing.

Neighborliness: reference to mutual self-help, friendliness and sociability. "When in trouble, someone will help at a moment's notice."

Familial: mentions of doing things as a family; of raising a family, and benefits to children.

Natural Order: expressions of a "balance of nature" notion; of "things being better before the government stepped in," a reverence for the past and tradition, favoring no growth or very slight growth, mentioning no dislikes or problems associated with living in Lincoln County.

Individuality: freedom, expressions of disgust over regulation of pinenut gathering and wood-cutting; doing what they want to do without formal restriction.

Equalitarianism: coded when the respondent was not able to detect group differences, or when expressions such as "everyone is treated equally" and "doing things for the good of all" were employed.

Democracy, Self-determination: concern about "losing control to Washington," rising bureaucratic control, the "need for consulting the people," and for the communities to work together.

Practicality: expressions favoring economic solutions to problems, short-term views on land use, irritation over activities which seem to prolong or make more difficult situations which, in the respondent's view, could be handled more swiftly and efficiently, e.g., "You can't develop a spring without an environmental impact statement."

Change: a desire for growth, economic development, bringing in new industry; the view that "old-timers are holding things back."

Property Ownership: references to the people owning the land and not the BLM; favoring releasing the land for private development.

Education: expressed need for new or changing schools, or that education was an important consideration with respect to staying in, or liking, Lincoln County.

Religion: fatalistic views, e.g., "God's will," etc., and reference to church activities and their importance in the respondent's life.

Honesty, Trust: reference to these traits in relation to local government and to the character of residents, "no need to lock your doors", etc.

Table 18
CONSISTENCY OF VALUES: PROPORTION OF SUBPOPULATION MEMBERS EXPRESSING INDICATED VALUES

	RURALITY	ENVIRONMENTAL	NEIGHBORLINESS	FAMILIAL	NATURAL ORDER	INDIVIDUALITY	EQUALITARIANISM	DEMOCRATIC SELF DETERMINATION	PRACTICALITY	CHANGE	PROPERTY	EDUCATION	RELIGION	HONESTY, TRUST
*General Public	HI	HI	HI	MOD	MOD	LO	LO	LO	LO	LO	VLO	LO	VLO	VLO
Influentials	VHI	MOD	HI	HI	HI	VHI	HI	HI	HI	MOD	MOD	LO	LO	LO
New Retireds	VHI	VHI	HI	MOD	HI	LO	HI	LO	LO	LO	LO	LO	VLO	LO
Newcomers	HI	HI	HI	MOD	MOD	MOD	MOD	LO	LO	LO	VLO	LO	VLO	LO
Sportsmen	HI	HI	MOD	MOD	HI	MOD	MOD	LO	MOD	LO	LO	LO	VLO	VLO
Ranchers	HI	HI	HI	VHI	HI	LO	MOD	LO	LO	VLO	LO	LO	LO	VLO
Old-Timers	VHI	HI	MOD	HI	HI	MOD	LO	LO	LO	VLO	LO	LO	LO	VLO
Mormons	VHI	HI	HI	HI	HI	MOD	MOD	LO	LO	LO	LO	LO	MOD	VLO
*Non-Mormons	HI	HI	HI	MOD	MOD	LO	LO	LO	LO	LO	LO	LO	VLO	VLO
Business-Professional	VHI	HI	HI	MOD	HI	HI	MOD	MOD	MOD	MOD	LO	LO	LO	LO

Key:			
	Very High	(VHI)	80%+ or more of the respondents in this group expressed this value
	High	(HI)	60-79%
	Moderate	(MOD)	40-59%
	Low	(lo)	20-39%
	Very low	(VLO)	0-19%

*These categories were not specifically mentioned by the population of Lincoln County but are included for the purpose of comparison.

Source:
Reichart, Loren, and James Frey, Lincoln County Value Survey. Las Vegas, Nevada, June 1976.

C. Results

A strikingly high consistency of mention within and between groups may be observed concerning the first five of these value-dimensions. Rurality, environmental values, neighborliness, family, and natural order appear as the central themes of Lincoln County. In this, residents of Lincoln County are similar to Americans who have been studied in other rural communities. "Rurality" is the key value dimension and deserves emphasis. It can be easily related to any of the BLM policies that have stirred some controversy. Christmas tree restrictions, harvesting of wild horses, any BLM enforcement of range policies--these all may be viewed as an encroachment on rural life which is really inclusive of most of the other value dimensions.

Change is a value that is seldom expressed by the general public. Even among those groups more inclined to favor change (businessmen-professionals and influentials), change is most often qualified in terms of "progress" that would preserve, or at least not upset, the natural order. Typically, these people favor economic development sufficient to provide jobs so that young residents would not have to move away to find work. This was often mentioned as change that would modestly and gradually increase the population without altering the rural character of the county. Yet even this limited view of change is contrary to the views of old-timers and ranchers (50 percent of whom are old-timers) who define natural order in terms of the status quo. One rancher, who is also an influential, expressed the fear that growth means housing and that "houses would be built in the good bottom-lands."

Similarly, the political values of individuality, democracy, and practicality hold greater salience for the businessmen - influentials than for the ranchers and old-timers. The businessmen define the BLM as "landlocking" the communities by controlling land that would otherwise be available for industry, housing, and their own interest in owning acreage for hobby-ranching.

Few respondents identified specific places, areas, or objects within Lincoln County as holding particular value for them other than those places incorporated within the State Park System, or marked as historic sites. Ella Mountain, the Panaca and Caliente summits, Gleason Canyon, and Ash Springs were mentioned as places of value. The places of value were mentioned in every case as favorite locations for picnics and family outings. It is perhaps safe to interpret Lincoln County in its entirety as a place to be preserved rather than to concentrate on a few specific places.

It is important to emphasize the stability of the population of Lincoln County. "There is really no reason to expect the people or the land to change. Perhaps the future changes in Lincoln County will come only if the state or private developers take over

the land of if there is an influx of industry. Perhaps the persons who value rurality so much have not realized that the BLM, by controlling the use of the lands, is really acting on their behalf and actually preserving that rurality." (Dr. Frey)

"People in Lincoln County, in general, may be said to value preservation of the county as it was in traditional usage and to do so without interference. This presents some inconsistencies and conflicts which they may be generally unaware of; e.g. that traditional usage itself may alter the character of the land; that different perspectives exist within the community itself concerning the natural, traditional usage of land (business vs. rancher).

.32 Social Well-Being

This section is intended to compare certain social well-being factors in Lincoln County and the State of Nevada by examining common quantifiable indicators. These indicators are population change, per capita income, migration patterns, the unemployment rate, and per capita spending in public service categories such as health, education, public safety, hospitals, and roads. An additional indicator measures employment dependence on the two largest industries in the county and is compared to the State average.

A. Identification and Nature

Population Change: Though the population has declined in Lincoln County from levels reached in the 1940's and 1950's, the trend reversed itself in 1960. Since 1960, the population has been nearly stable, experiencing a growth rate much less than that of the State.

Personal Income: Lincoln County per capita income was 160 percent of the U.S. average in 1950. In 1972, per capita income in the county had dropped to 91 percent of the U.S. average. Median effective buying income (households) was only 70 percent of the Nevada median in 1974.

Migration Patterns: Between 1970 and 1973 Lincoln County had a net migration of -15.9 percent while the State experienced a net migration of +8.6 percent. This is an indicator of employment opportunities in the county and reflects fluctuations in the mining industry. When mining activities are increasing, as they are in the Alamo area, in-migration occurs and affects this variable. Employment in the mining industry dropped from 1970 to 1972 but had once again increased in 1974. This pattern is true for all sectors of employment except agriculture, which employed fewer people in 1974 than in 1970.

Employment: In 1975, Lincoln County experienced an unemployment rate of 8.7 percent which was lower than the 9.9 percent rate for the State.

Per Capita Spending In Public Service Categories: In all areas except public safety, per capita spending in Lincoln County was less than that of the State. While this may indicate a reduction in social well-being in the county, it may also be the result of excess capacity already present in the system. Per capita spending for roads, for example, is much less in the county as opposed to the State; however, the county has a good road system capable of meeting existing needs. Per capita spending for health, however, is somewhat lower in the county and this may indicate a lack of some health

services which may be available in other areas of the State. Once again, though, because of the relatively stable population size coupled with good existing facilities, the lower per capita spending in Lincoln County may be merely a reflection of excess capacity and an absence of heavy demand for health services.

Employment Dependence: Another measure of social well-being is the dependence on the two largest industries for employment. It is generally believed that an area is in a better position, in respect to employment stability, if it is not highly dependent on one or two industries. High dependence on one or two industries subjects an area's employment to fluctuation in those industries to a much greater degree than when employment is broadly-based in many various industries. Taking an average of each county's two largest industries, a dependency figure typical for counties of the State is 40 percent. Employment in the two largest categories in Lincoln County accounts for only 30 percent of total employment. This indicates a greater degree of diversity in Lincoln County as compared to the average of all counties for Nevada. Also, Lincoln County is somewhat less dependent on mining than other counties in the State. Percentage employment in mining was 5.6 percent while the State average was 9.01 percent in 1969. While Lincoln County is subject to the fluctuations in the mining industry, it is not affected to the degree that other counties experience.

B. Significance

Table 19 compares Lincoln County with Nevada in terms of the common quantifiable measures discussed in the previous section. It indicates areas where Lincoln County is statistically different from the State. Whenever an indicator differs greatly from that of the State, the difference may be considered significant. Significant areas are considered as either enhancing or reducing social well-being. However, it must be noted that when considering community social goals and desires, various areas may not be judged significant as to well-being by the residents of that community. Additionally there may be special circumstances affecting the indicator as discussed in the previous section.

Table 19
Significance of Social Well-Being

Well-Being Factors	State	County	Percent Difference C-S-S
1. Population change (average annual rate of change)			
1960-1970	5.53%	0.51%	-91**
1970-1975	3.61%	1.26%	-65
2. Personal income (per capita - 1973)	5712	4032	-32
3. Indicator of migration patterns as an employment opportunity (1970-73)	+8.6 %	-15.9 %	-285**
4. Employment (unemployment rate CY 1975)	9.9 %	8.7 %	-12
5. Per capita spending public service categories			
A. Health	$13	4	-69
B. Education (local schools)	251	208	-17
C. Public Safety (police & fire)	36	36	-0
D. Hospital	72	55	-24
E. Roads	141	54	-62
6. Percentage employment in largest two industries (state figure is average for all counties - 1969)	40%	30%	-25*
Mining	9.01%	5.6%	-38*

*Significant in enhancing social well-being
**Significant in reducing social well-being

C. Social Well-Being Thrust Analysis

Table 20 lists those social well-being factors that may be affected by each resource activity. Resident perceptions are considered and general types of program thrusts which can serve to enhance social well-being are identified.

Table 20
Social Well-being Thrust Analysis

Resource Activity	Well-being Factors	Resident Perceptions	Program Thrust Narrative
1. Lands	Population change	Feel that population size is increasing at a desirable rate	When need arises make land available to accommodate growth and promote diversity in urban-suburban expansions.
	Personal income		
	Employment dependence and diversification		
	Per capita spending on public services	Feel that county is hampered by small tax base	Land transfers under public purpose opportunities .
2. Minerals	Personal income		Within environmental and other constraints, should not hinder mineral exploration.
	Migration patterns		
	Employment	Feel that mining is necessary	
	Per capita spending on public services		Increased public tax revenue generated by increased mining activities at the same time may put strain on infrastructure.
3. Woodland Products	Employment	Believe wood production is a potential source of new employment	Encourage increased production which would generate new sources of income
4. Range Management	Personal income	Local and national interests want improvement of NRL	Range improvements that promote increases in production efficiency will increase per capita income

Table 20 cont.

Social Well-Being Thrust Analysis

5. Wildlife	Personal income	Want a larger game population	Increase hunter and visitor activities by increasing wildlife population
6. Recreation	Employment Personal income	Most would like to see increased tourism	Provide opportunities that promote increase employment and new sources of income.
	Per capita spending on public services		Increased recreational activities may put strain on infrastructure (i.e. public safety)

D. Visual Resource Management

Visual Sensitivity Levels and Visual Zones: In accordance with appropriate BLM Manual releases, six criteria were selected for use in setting the visual sensitivity levels for the Caliente Planning Unit. These criteria and the weights assigned to them were:

Criteria	Weight
Use Volume (Cars and Trucks)	4
Use Volume (Airplanes)	1
Use Association (primarily deals with recreation use)	6
Community Attitudes	5
Land Use (in relationship to non-BLM land use or to the use of BLM land under permit/license)	3
Other Agency Planning Attitudes	2

Using these criteria, the numerical scores in Table 21 were obtained.

The following sensitivity classes developed have been plotted on an overlay. Likewise, an overlay has been developed which divides the planning unit lands into visual zones. These zones are: (1) foreground-middleground, (2) background, and (3) seldom seen. Both of the above overlays will be utilized in developing Step 1 of the Caliente Planning Unit Management Framework Plan's Visual Resource Management component.

Table 21
Visual Sensitivity Classes

Area Name and Number		Use Volume-Cars	Use Volume-Planes	Use Association	Community Attitudes	Land Use	Agency Planning	Sensitivity Class (H, M, L)
Sand Spring Valley	401	1	0	1	1	1	0	L
Groom Range	402	1	0	3	1	2	0	M
Tickaboo Valley	403	1	0	1	1	1	0	L
Tempaiute Range	404	1	0	2	1	2	0	L
Pahranagat Range	405	1	0	2	1	1	0	L
East Pahranagat Range	406	1	0	1	2	2	1	M
Pahranagat Valley & Vic.	407	3	0	4	4	3	2	H
South Pahroc Range	408	3	0	4	2	1	0	M
North Pahroc Range	409	3	0	2	1	2	0	M
Delamar/Dry Lake Valleys	410	2	0	2	2	1	0	M
Highland Range	411	2	1	5	3	2	0	H
Mount Ely	412	1	0	1	2	1	1	L
"Panaca Drainage"	413	4	1	2	3	1	2	H
Delamar Mountains	414	2	1	4	3	2	0	H
Dry Valley	415	2	0	2	4	2	1	M
Clover Creek (lower)	416	1	0	3	3	2	0	M
N. Meadow Valley Wash	417	2	0	6	4	2	1	M
S. Meadow Valley Wash	418	1	0	3	2	0	0	L
Clover Mountains (eastern)	419	1	1	4	4	2	0	H
Mormon Mountains	420	1	1	3	2	1	0	M
Mahogany Mountains	421	1	0	2	2	1	0	L
Gleason Canyon Area	422	1	1	4	5	3	2	H

Table 21 (cont.)
Visual Sensitivity Classes

Area Name and Number		Use Volume-Cars	Use Volume-Planes	Use Association	Community Attitudes	Land Use	Agency Planning	Sensitivity Class (H, M, L)
Crestline Area	423	2	1	2	2	1	0	M
Barclay Area	424	1	0	2	2	1	0	L
Beaver Dam Area	425	2	1	6	5	3	2	H
Tule Desert	426	1	1	1	1	1	0	L
Meadow Valley Mtns.	427	1	0	1	1	1	0	L
Kane Springs Wash	428	2	0	1	1	1	0	L
"Far South MVW"	429	1	0	1	1	1	0	L
Clover Creek (Middle)	---	1	0	5	4	3	1	H
Clover Mtns. (Ella Mtn.)	---	1	0	6	4	2	0	H

.33 Public Positions and Expenditure Analysis

Public statements and attitudes towards each resource activity that have been documented are summarized in Table 22. Various sources were researched to gather this information. Positions of special interest groups relating to the Caliente Management Framework Plan in 1973 were reviewed. Also, a study by John C. Willie and Associates, Citizen Involvement Goals and Policies, prepared in 1974 as part of the county master plan, has been studied with regards to attitudes concerning management of national resource land. Bureau files, newspapers, both local and regional, and the Lincoln County Library were also researched. Most of this information is in the Lincoln County Social-Economic Profile.

Table 22

Public Positions and Expectations

Resource Activity Lands

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
Nevada Open Space Council	Support multiple land use		Support primitive and wilderness areas	
Nevada Outdoor Recreation Association	Want multiple use classification	Support wildlife and recreation management	Limit ORV use in certain areas	Want specific areas designated as primitive areas
Sierra Club		Restrict ORVs	Protect and designate wilderness and primitive areas	
Nevada Archaeological Survey, University of Nevada, Desert Research Institute, and recognized amateur groups	Conduct cultural resource inventories and ensure protection and conservation of the cultural resource base	Protect sites from pothunters, vandals, and other destructive activities which do not provide for adequate mitigation	Protect identified critical areas and sites assessed as S1 and S2 (National Register eligible or highly significant)	

Table 22 (cont.)

Public Positions and Expectations

Resource Activity Minerals

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
Intermountain Exploration Co.	Free access for mineral exploration	Should be fewer withdrawals and restrictions on mining activities	Totally oppose creation of more primitive areas	
Sierra Club	Support multiple land use	Restrict damage to land by mining and road developments		
Nevada Mines and Prospectors Association	Resources should be used to meet national and local needs	Mining should not be restricted by conservation		

Table 22 (cont.)

Public Positions and Expectations

Resource Activity Forestry

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
Nevada Division of Forestry		Should encourage increased production of forest products; primarily develop potential of Pinyon Juniper harvesting	Identify and designate areas for timber production	

Table 22 (cont.)

Public Positions and Expectations

Resource Activity Range Management

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
Nevada Cattlemen's Association	Support more intensive range management and improvements	Desire insurance that private capital needed to complete the plan is fully protected	Would like more mechanical manipulation to remove non-forage competition	
National Resource Defense Council, Inc.	Protect environment from further deterioration and promote rehabilitation	Want changes in grazing plans to protect public rangelands		Through court process, have made grazing environmental impact statements a requirement
Wild Horse Groups	Preservation of wild horses on the public range	Want wild horses considered in AMPs	Don't want wild horse refuge	Want humane treatment in handling wild horse situations
Sierra Club		Protects chainings and seedings		Oppose overgrazing on existing allotments

Table 22 (cont.)

Public Positions and Expectations

Resource Activity Wildlife

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
Nevada Cattlemen's Association	Promote increased forage for wildlife rather than reduced grazing of livestock	Should be more coordination between the federal and state governments		
Nevada Department of Fish & Game	Protect crucial identified wildlife habitat areas	Emphasize bighorn and rare and endangered species	Promote uses of areas that are compatible with wildlife	Implement studies of wildlife use
Lincoln County Area Development	Promote conservation and improvement	Protect wildlife habitat		
Nevada Outdoor Recreation Association		Promote increased wildlife population to improve hunting		

Table 22 (cont.)

Public Positions and Expectations

Resource Activity Recreation

Name of Group(s) If Applicable	Position Toward Land Use in General	Position Toward Resource Activity Practices	Position Toward BLM Land Areas	Position Related to Specific Resource Projects
National Campers and Hikers Association	Support multiple land use		Support wilderness and primitive areas	
Mining interests		Oppose designating historic sites if it means withdrawal or restriction of access to mineral deposits		
Nevada Open Space Council			Selected areas should be designated primitive areas and historic sites	
Nevada Outdoor Recreation Association		Promote present compatible uses of all resources	Develop camp and picnic sites	
Sierra Club		Promote recreation while protecting the environment		

.4 Infrastructure and Bureau Relationships

Table 23 is an index which displays a summary of infrastructures, (ground work) agreements, and relationships in the Caliente Planning Unit. Also displayed are the resource activities which they impact, or which affect the infrastructures or relationships. This is an index of information contained in the Lincoln County Social-Economic Profile (1606). The SEP also includes a review of relationships between the BLM and other agencies in terms of obligations and commitments on BLM programs or activities. (All relationships are covered generally; specific relationships discussed are denoted by an "x".)

Table 23
INFRASTRUCTURE AND BUREAU RELATIONSHIPS DATA INDEX

	Data in Social-Economic Profile	Lands	Minerals	Forestry	Range	Watershed	Wildlife	Recreation	Cadastral Survey	Roads & Trails	Fire Control
Transportation	p 54									X	
Communication	54										
Fire Control	57										
Land Survey	57										
Public Utilities	59										
Water & Waste Disposal	60	X									
Health Systems	62										
Education	63										
Law Enforcement	64										
Public Safety	64										X
Public Attitudes	14	X	X	X	X	X	X	X			
Other Agencies											
Federal:											
U.S. Geological Survey	68										
U. S. Bureau of Mines	68										
U. S. Army Corps of Engineers	68										
U. S. Soil Conservation Service	68										
U. S. Fish & Wildlife Service	69										

Table 23 (cont.)
INFRASTRUCTURE AND BUREAU RELATIONSHIPS DATA INDEX

	Data in Social-Economic Profile	Lands	Minerals	Forestry	Range	Watershed	Wildlife	Recreation	Cadastral Survey	Roads & Trails	Fire Control
State:											
Coop. Extension Sevice	p 68										
Nevada Highway Department	69										
Nevada Department of Fish and Game	69										
Nevada Division of Forestry	17			X							
State Clearinghouse											
State Land Use Planning Agency											
Nevada State Parks	16	X						X			
Local:											
Lincoln County Commission	69										
Caliente City Council											
Lincoln County TV District	70										
Action, Study, and Interest Groups:											
Sierra Club	Bibliography										
Nevada Prospector's Association											
Nevada Cattlemen's Association											

Table 23 (cont.)
INFRASTRUCTURE AND BUREAU RELATIONSHIPS DATA INDEX

	Data in Social-Economic Profile	Lands	Minerals	Forestry	Range	Watershed	Wildlife	Recreation	Cadastral Survey	Roads & Trails	Fire Control
Wild Horse Organizational Assistance	Bibliography										
Nevada Open Space Council											
National Resource Refuse Council											
Cooperative Relationships											

.5 Critical Environmental Area Analysis

Steps 3 and 4 of the Environmental Profile have identified some environmentally important areas of national resource lands that BLM feels should be protected.

Parts of the South Pahroc and Clover Mountains are proposed primitive areas while the Pahranagat Range, Mormon Mountains, and Gleason Canyon have been identified as primitive study areas. These areas are nationally significant because they (1) contain natural lands as yet unspoiled by civilization, (2) contain ecological, geological, or other features of scientific or scenic values, and (3) provide opportunity for a unique recreational experience.

Five regionally significant botanical areas that have been identified in the Caliente Planning Unit include the Highland Peak Botanical Area, East Mormon Barrel Cactus Area, Delamar Joshua Tree Forest, Quaking Aspen Spring, and Cabin Pines.

In addition, three geological sightseeing areas on national resource lands that merit attention are Pennsylvania Canyon, Teepee Rocks, and "the Crack". All of these areas have regional significance.

The cultural resource values present in the Caliente Planning Unit are important regionally and may prove upon further investigation to have national significance. The Beaver Dam, Pahranagat Valley, and Meadow Valley Wash have been identified as critical archaeological areas. While O'Malley and Conway shelters and Etna Cave have specially been identified as important archaeological sites. The Panaca Charcoal Kilns have already assumed national significance; they have been nominated to the National Register of Historic Sites.

Quite a number of crucial wildlife habitat areas are scattered throughout the Planning Unit. These areas are identified as "crucial" because they contain a relative abundance of palatable forage and/or permanent supplies of water.

Crucial deer summer and winter ranges are contained within the Clover Mountain and Beaver Dam unique areas outlined on Environmental Profile Overlay #2. The summer ranges like Bunker Peak and Ella Mountain provide forbs which are important to the animals' diet. The winter ranges like Barclay burn and Simpkins seeding provide desirable shrub species. Crucial bighorn areas which are present within the Mormon Mountains and Meadow Valley Range provide a combination of good forage, water, and isolation from man's activities. A good supply of water, food, and cover is available for small game and nongame animals in Meadow Valley Wash. Bighorn and mule deer populations are popular big game animals in the State of Nevada, while quail, rabbits, and mourning dove are important small game species.

Because aquatic habitats are so scarce in Southern Nevada, such areas in the Caliente Planning Unit take on special significance. These include Ash Spring, Upper and Lower Pahranagat Lakes, Crystal Spring, Meadow Valley Wash, Clover Creek, and Beaver Dam Creek.

Ash Spring, the Pahranagat Lakes, Crystal Spring, and Beaver Dam Creek have additional importance in that they contain endangered or protected fishes or snails.

There are other environmentally significant areas in the planning unit which are not on national resource lands.

Over 4,000 acres are managed by the State of Nevada. They include four state parks. The Beaver Dam State Park is noted for its perennial fishable stream and pleasant camping and picnicking atmosphere. Cathedral Gorge contains unique geologic formations. Kershaw-Ryan provides a shady retreat close to the town of Caliente. Echo Canyon has a reservoir, interesting rock formations and marks the transition zone between cold northern desert vegetation (sagebrush and shadscale) and pinyon/juniper woodlands. The State also manages Frenchy Lake, south of Hiko, which gets some waterfowl use.

The U.S. Fish and Wildlife Service is in charge of the Pahranagat National Wildlife Refuge which covers about 5,000 acres. This area is important as a site for wildlife (waterfowl, small game, and nongame animals), nature study, hunting, and picnicking.

The Nevada State Park System has also expressed interest in acquiring certain national resource lands as additions to these state parks. They have submitted Recreation and Public Purposes Applications for the purchase of the following areas:

1) 160 acres near Echo Canyon State Park (T. 1 N., R. 69 E., Section 29, SW¼).

2) 320 acres near Kershaw-Ryan State Park (T. 4 S., R. 67 E., Section 18, SE¼, SE¼SW¼, Section 19, N½SE¼, NE¼SW¼).

3) 2,952.5 acres near Beaver Dam State Park (T. 5 S., R. 71 E., Section 4, S½; Section 5, W½; Section 7, all; Section 9, N½, Section 18, N½, SE¼; Section 20, all; Section 21, SW¼NW¼, W½SW¼, SE¼SW¼; Section 8, N½NW¼).

4) 360 Acres near Cathedral Gorge State Park (T. 1 S., R. 68 E., Section 19, SW¼, S½NW¼, W½SE¼, SW¼NE¼).

The Nevada State Parks System feels that the acquisition of these lands would allow more efficient management and maintenance of the park, would help protect geographical, historical, and scenic values, and would increase recreational opportunities. Some of the proposed uses of these lands include overlooks, interpretative exhibits, trails, and campgrounds.

.6 Problems and Issues Summary

Table 24 presents a summary of problems and issues in the planning unit. Identified areas of concern, both local and non-local, are presented. The summary draws from the separate sections presented earlier in this Planning Area Analysis, from the Lincoln County Social-Economic Profile and from the Unit Resource Analysis for each specific resource in the planning unit.

Table 24
Problems and Issues Summary

Problems/Issues	Social	Economics	Remarks
Restriction on tax base brought about by public ownership of land	Hampers growth of social amenities (development of parks, recreation centers, etc.)	Restricts revenues that provide goods and services	The problem has been acknowledged and pending legislation is designed to provide revenues to areas which face this difficulty.
Communities are landlocked because of public ownership of surrounding areas	Does not allow for residential expansion which hampers population growth	Restricts industrial expansion which reduces employment opportuni-	While these are obvious and real concerns of residents in the county, the Lincon County Master Plan identifies existing vacant man-agricultural private land within the communities that would be utilized to accommodate the projected population growth levels.
Mineral regulations	Restricts freedom to pursue lifestyle	Reduces employment opportunities	People feel access should not be hampered or discouraged.
Environmental concerns relating to mining	Possible aesthetic and environmental damage		Environmental groups strongly oppose unrestricted mineral exploration and extraction.
Harvesting of desert vegetation	Current regulations encourage vegetative trespass and discourage the use of low water-demand plants in residential gardens.	Issuing limited harvesting permits (non-commercial) would tend keep landscaping costs down (thereby keeping dollars in the planning unit rather than allowing them to travel to out-of-region nurseries)	Nurseries in the region find it very difficult to obtain desert vegetation from legal sources.

Table 24 (cont.)
Problems and Issues Summary

Problems/Issues	Social	Economics	Remarks
Harvesting of live trees for firewood	Area residents see no reason why firewood harvesting should be restricted to dead or down wood. This attitude seems to be strongest in relation to areas that are very densely stocked with pinyon-juniper trees and could be improved for wildlife and livestock use by being thinned	Allowing the cutting of green trees for firewood would result in shorter trips for local wood cutters while providing the benefits of thinning to densely stocked stands	The cutting of live trees for firewood would require very close supervision to prevent the proliferation of roads and the accumulation of slash (a fire hazard).
Pinyon nut harvesting	Area residents object to the confusion relating to the requirement for having a permit for harvesting pinyon nuts on national resource lands	None	There has been some misconception regarding these requirements. In the past several years these permits have not been required within the Las Vegas District. However, the Ely District does require a no-cost permit. This conflict in regulations leads to Caliente Planning Unit residents thinking that they need a permit and consequently driving to Ely to get one.
Regulations relating to forest products	Restrict "traditional" freedoms	Restricts outside source of income	People feel most of the regulations concerning the gathering of forest products are unnecessary.

Table 24 (cont.)
Problems and Issues Summary

Problems/Issues	Social	Economics	Remarks
Declining range suitability	Deterioration of ranching lifestyle	Decrease stability of ranch operators, and livestock production capacity	There has been declining employment in the agricultural segment of Lincoln County's economy in the past few years.
Competition for forage by livestock, wild horses, wildlife and watershed protection	May cause local-non-local conflict	May cause reduction in ranch income if livestock grazing is reduced. May also increase income in county as a result of better hunting opportunities brought about by increased wildlife population	Wildlife, wild horse and environmental groups feel multiple-use management is required to provide resolutions of conflicts
Regulations relating to range management	Restricts traditional grazing use	Reductions of grazing privileges reduces income	Users of Federal range feel that wildlife and wild horse groups are interfering with the livestock industry.
Decreased wildlife populations	Deterioration of local lifestyle	Decrease in general recreation and hunter related revenues	A quota system is being instituted in the planning area because of decreased deer population
Tourist facilities (Restaurants, gas stations, and motels)	Quality and quantity not appealing; Leads to shorter stays for recreational use	Employment not as great as could be if lengths of stay could be increased	Concerted community action will be required to reverse this downtrend in quality and quantity. This is especially true in view of the White River Highway construction.

Table 24 (cont.)
Problems and Issues Summary

Problems/Issues	Social	Economics	Remarks
Acquisition of NRL for park purposes	May cause local and non-local conflict. Also, local land owners fear being surrounded by park lands and then being forced to sell their property	Local residents claim loss to their economic base. For example, the transfer of park lands may decrease the livestock forage available to a grazing operator. Addition of park lands may improve the tourism situation	Transfer of such lands to public agencies is a stated purpose of the Recreation and Public Purposes Act.
Wild horses/burros may cause hazardous conditions on highway	Possible injuries and death may result from horse/burro-auto accidents	Loss of property may result from horse/burro auto accidents	
Wild horses/burros are living symbols of the historic and pioneer spirit of the West. They contribute to the diversity of life forms within the nation and enrich the lives of the American people (Wild Horse and Burro Act)	Wild horses and burros have great aesthetic value to some people		

Table 24 (cont.)
Problems and Issues Summary

Problems/Issues	Social	Economics	Remarks
Wild horse/burro management is greatly restricted by PL92-195.	There are many public objections to any attempt at wild horse and burro management. (persons sympathetic to wild horses/burros)	Roundups and placement are expensive. Because of this fact there are few roundups and the vegetation and soil resources decline	Aircraft and motorized vehicles may not be used in management activities. More protection is afforded wild horses/burros than even the native wildlife species.
Areas with severe and/or rising SSF (soil surface factors) ratings and areas with deteriorating range conditions	Restrictions necessary to improve this condition will adversely affect several land uses--ORV's, grazing	Modification of livestock grazing could have economic impact on range users	
Potential damage to critical archaeological sites or areas--Beaver Dam, Panaca charcoal kilns, Delamar Cemetery, O'Malley Shelter	Potential loss of irreplacable cultural values and clues to past life in southern Nevada	No monetary value can be placed on an irretrievable commitment of cultural resources	Vandalism, illicit collection are primary causes of the problems; surveys, restorations, interpretation, protection are some of the solutions.
Deteriorating aquatic and riparian habitat--Clover Creek, Pine, Ash, and Cottonwood Creeks, Ash Spring	Leads to decrease in wildlife which leads to a decrease in quality of hunting, wildlife and sightseeing	Leads to a decrease in wildlife which leads to drop in hunting and fishing days (and loss of revenue to State and local businesses)	Major causes include overgrazing, contamination, lack of pools and ripples.

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